

New taxa and new records of birds from the north coastal ranges of New Guinea

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SUMMARY.—We report the ornithological results of field trips in 2005 and 2007 to the Foja Mountains of Indonesian New Guinea. Our subsequent analysis of the avifauna of this little-studied and isolated mountain group in the context of the biogeography of New Guinea's north coastal ranges produced the following results: (1) a new subspecies of the mouse-warbler *Crateroscelis robusta* from the Foja Mountains; (2) evidence that *C. robusta* exhibits sufficient geographic variation to warrant subdivision into two or more allopecies; (3) a distinctive new subspecies of the Goldenface *Pachycare flavogriseum* from the northern ranges of Papua New Guinea; (4) conclusive evidence that the 'lost' bird of paradise, *Parotia berlepschi*, inhabits the Foja Mountains; and (5) several additional taxonomic and distributional records for the Foja Mountains.

New Guinea is the largest, highest and biologically richest tropical island. Its array of mountain ranges has promoted both avian speciation and subspecific differentiation that has been delineated and documented over the last century (Salvadori 1880–82, Mayr 1941, Rand & Gilliard 1967, Diamond 1972, Beehler & Finch 1985, Coates 1985, 1990, Beehler *et al.* 1986). Ernst Mayr's deployment of compelling examples of geographic differentiation and speciation of birds (e.g., *Paradisaea*, *Melidectes*) in the New Guinea region have become enshrined in the evolutionary literature (*cf.* Mayr 1942, 1963, 1970).

The outlying ranges of New Guinea remain one of the last frontiers of ornithological exploration, as evidenced by Diamond's various discoveries (Diamond 1969, 1982, 1985) and those announced by an international team that explored the Foja Mountains of western (Indonesian) New Guinea (Beehler 2006, Beehler *et al.* 2006), which are discussed here in greater detail. Diamond (1985) reviewed many interesting aspects of New Guinea's 15 outlying mountain ranges, and set the stage for follow-up field and museum studies. Of particular interest are those isolated northern ranges that include, from west to east, the Van Rees, Foja, Cyclops, Bewani, and Torricelli ranges—extending from northern Papua into north-western Papua New Guinea (hereafter PNG) (Fig. 1). Certain montane forms have differentiated in these northern ranges, but the examples of differentiation follow no set geographic pattern, and were subsequently termed 'checkerboard allopatry' by Diamond (1972).

Here, we report the taxonomic results of two biodiversity-focused field trips to the Foja Mountains of western New Guinea in 2005 and 2007. These trips were the long-delayed result of the inspiration generated by Diamond's 1979 discovery of the haunts of the 'lost' Golden-fronted Bowerbird *Amblyornis flavifrons*—described in 1896 by Lord Rothschild from trade skins taken at an unknown locality in western New Guinea (Diamond 1982, 1985). Following the announcement of Diamond's discovery, BMB made plans to return to the Foja Mountains (= Gauttier or Foya Mountains). These were delayed 18 years, during which BMB undertook three over-flights and selected a possible helicopter-landing site in the interior uplands. Meanwhile, Conservation International (CI) established a programme in the Mamberamo Basin, constructing a field base at Kwerba, a village in the



Figure 1. Locator map for the Foja Mountains and other outlying mountain ranges in central and western New Guinea.

western foothills of the Fojas (Fig. 1). Repeated discussions by CI staff with village leaders in Kwerba and nearby Papasena finally produced assent from the local communities for an expedition into the mountains—a critical hurdle in the process. This was followed by the signing of a memorandum of agreement between CI and the Research Center for Biology of the Indonesian Institute of Sciences (LIPI) in 2004, formalising a partnership for field research. Official permission was granted in mid 2005. A Conservation International Rapid Assessment (CI-RAP) field team was then assembled, comprising international and Indonesian scientists, and a plan was developed to get field teams into the foothills by foot and the interior uplands via helicopter. The expedition was successfully rolled out in November–December 2005 (Beehler 2006).

Considerable publicity surrounding the findings of the 2005 expedition provided an opportunity to return to the Foja Mountains in June 2007 with a film crew. This provided an additional opportunity for BMB and an Indonesian vertebrate zoologist to collect further data on the birds and mammals of the Foja uplands.

Field work and study sites

2005 The CI-RAP team arrived at the Kwerba village base camp (70 m) on 15 November 2005. One segment of the 14-person scientific crew was tasked to survey the hill forest on foot and the second was assigned the highlands, to be accessed by helicopter. The montane team landed at the Bog Camp (1,652 m) on 22 November and remained until 7 December 2005. This team operated from a single camp at the Bog, but visited forests at 1,200–1,900 m via trails established by the team. During this period, the hill forest team surveyed from Kwerba to Hotice Camp in riverine forest at 700 m with a field ornithologist (Neville Kemp) conducting bird surveys to 750 m above Hotice Camp.

2007 The joint CBS-film / CI-science team arrived at Papasena village base camp on 14 June and at the Bog Camp by helicopter on 15 June, remaining until 25 June. All field work was conducted within 2 km of the Bog Camp.

Methods

Birds were surveyed by sight, sound and mist-net. In a few instances, the Kwerba hunters brought birds that they had shot with bow-and-arrow (one woodcock, two forest

rails and one mouse-warbler). A network of c.10 km of trails was cut by the team for observing and sampling plants and animals. These were surveyed at various hours of the day and night. Mist-nets were operated day and night. Bird vocalisations were recorded using a shotgun microphone and a digital mini-disc player recording onto high-MD disks, the results of which have been deposited at the Macaulay Library of Natural Sounds (Cornell Lab of Ornithology, Ithaca, NY). Finally, 98 specimens were taken (31 as study skins, the rest as whole anatomical specimens), all deposited at the Museum Zoologicum Bogoriense (now at Cibinong). The study skins were studied in the Cibinong collection as well as at the American Museum of Natural History (AMNH), New York, making direct comparison with relevant available material at those institutions. We discuss certain montane species of taxonomic and distributional interest below.

Species accounts

MAYR'S FOREST RAIL *Rallicula mayri carmichaeli*

Specimen data.—Adult male, 3 December 2005, Bog Camp, weight 133 g, wing chord 102 mm, wing arc 109 mm, iris dark brown; adult female, 27 November 2005, Bog Camp, weight 108 g, wing chord 97 mm, wing arc 104 mm, iris dark brown.

Diamond (1985: 69) encountered this species in the Fojas but was unable to collect it. We collected a male and a female, which are closest to the population from the north coastal range of PNG (*R. m. carmichaeli*) in having a dull dark chestnut head, crown, nape and mantle. Furthermore, both *R. m. carmichaeli* and the Foja birds lack barring on the upper tail, which is present on the type of *R. m. mayri*. Given the relatively few specimens available of *R. mayri* and the rather considerable variation in part related to sexual dimorphism and perhaps also to age, it is difficult to definitively diagnose races within the species. The Foja female is distinct in having abundant bright dorsal spotting. Geographically (Fig. 1), the Foja Mountains are closer to the Cyclops Mountains than to the Bewani and Torricelli Mountains of PNG and yet the Foja birds are morphologically closest to the more distant population, an example of checkerboard allopatry (Diamond 1972).

Diamond (1969, 1985) described *Rallicula* populations in detail, and made clear that the distinction between *R. mayri* and *R. forbesi* is subtle—their plumage and morphology are quite similar. Given that these geographic isolates are behaviourally similar, similar in vocalisation, and allopatric, it could be argued to combine *mayri* and *forbesi* into a single polytypic species.

The Foja form is a fairly common terrestrial inhabitant of mid-montane forest interior. It was easily observed and vocal. The field team obtained photographs of a single adult female alive in the hand in 2007.

LITTLE RED LORIKEET *Charmosyna pulchella rothschildi*

One was mist-netted under a flowering tree in the forest interior (female, ova small, weight 32 g, wing chord 93 mm, iris dull orange). The presence of a green band across the breast indicates this population is closest to *C. p. rothschildi*, which has been recorded from the Cyclops Mountains and the northern slopes of the central cordillera.

MOUNTAIN MOUSE-WARBLER *Crateroscelis robusta*

A distinct population of Mountain Mouse-Warbler was found at the Bog Camp of the Foja Mountains in 2007 and is described here as a new subspecies.

Crateroscelis robusta diamondi, subsp. nov.

Holotype.—Adult male, Museum Zoologicum Bogoriense (MZB) no. 30.692, Beehler field number (BBFM) 46. Mist-netted in forest at the Bog Camp, Foja Mountains, Sarmi District, Papua, Indonesia, at 1,652 m (02°34'22"S, 138°43'02"E) on 27 November 2005. The holotype is, by plumage, an adult male and also had a testis measuring 4 × 5 mm. Iris: rich red; bill: in dried specimen dark brown with paler horn base to mandible; leg colour: dull brown in dried specimen. Measurements: weight 15 g, wing chord 63 mm, wing arc 65 mm, tail 37.1 mm, tarsus 28.5 mm, bill from base 17.2 mm. Specimen prepared by BMB.

Distribution.—Known only from the type locality, but presumed to range through the uplands of the Foja Mountains and might also be expected in the adjacent Van Rees Mountains.

Additional specimens.—26 November 2005, MZB 30.693 (BBFM 29) adult male, testis 4 × 6 mm, weight 13.8 g, wing chord 63.5 mm, wing arc 65.0 mm, tail 37.2 mm, tarsus 28.5 mm, bill from base 17.2 mm, iris red; 26 November 2005, MZB 30.691 (BBFM 36) adult (unsexed), weight 15.2 g, wing chord 67 mm, wing arc 69 mm, tail 37.31 mm, tarsus 28.80 mm, bill from base 17.5 mm; [spirit specimens] 24 November 2005, BBFM 04 (MZB 30.737) shot by arrow, unsexed, weight 14.5 g, wing chord 58.0 mm, wing arc 61.0 mm, tail 37.2 mm, tarsus 28.2 mm, bill from base 15.0 mm, iris dark brown; 27 November 2005, BBFM 41 (MZB 30.745) unsexed, weight 15.5 g, wing chord 58.5 mm, wing arc 61.0 mm, tail 37.35 mm, tarsus 28.6 mm, bill from base 16.6 mm, iris dark brown; 28 November 2005, BBFM 58 (MZB 30.729) adult, weight 15 g, wing chord 58.0 mm, wing arc 58.6 mm, tail 37.4 mm, tarsus 28.1 mm, bill from base 16.9 mm, iris red; 1 December 2005, BBFM 81 (MZB 30.748) adult, weight 13.5 g, wing -, wing chord 55.4 mm, wing arc 57.1 mm, tail 37.0 mm, tarsus 29.0 mm, bill from base 16.62 mm, iris dark red; additionally, three individuals were mist-netted, marked and released, all had a brown or dark brown iris and a weight of 14.5 g. All specimens were mist-netted during the same ten-day period in 2005 and at the same locality as the holotype.

Diagnosis.—Adult male most similar to *C. r. pratti* of far south-east PNG, but larger and has a prominent snowy-white throat, mentioned by Diamond (1985: 73) as a distinct feature of the Foja population. The back, mantle, breast-band and flanks are uniform dark olive-brown. The back tends towards Smithe's colour 21 (Fuscous) and the flanks toward colour 22 (Burnt Umber). The male of the new form possesses a narrow white belly patch along the midline; this differs from specimens of the nominate form we examined from Mount Missim (Kuper Range), which have a dull tan-washed belly patch. A single photographed female of the new form is paler and duller than the male, but does exhibit a distinct dark breast-band and pure white throat.

Etymology.—The proposed name honours Prof. Jared M. Diamond, an eminent expeditionary ornithologist of New Guinea, who was first to ascend into the Foja Mountains (and many other outlying ranges) and who has laid the modern foundation of the understanding of the ornithogeography of New Guinea.

Regional variation.—Remarkably, *C. robusta* exhibits two levels of regional variation (Diamond 1969: 18–19) that merit review and reassessment. There are at least eight distinct populations (including *C. r. diamondi*) inhabiting all of the mountain ranges of New Guinea. These comprise three well-defined plumage types distributed in a classic case of checkerboard allopatry (Fig. 2), in which the geographic distribution of the plumage types is wholly inter-digited. This is not a case of plumage polymorphism, as there is no instance where more than one plumage type occurs in a single range.

The white-throated (dimorphic) type includes three named populations, A1 *C. r. pratti*, A2 *C. r. robusta* and A3 *C. r. diamondi*, plus A4, an unnamed form in the Kumawa Mountains

of far western New Guinea (see Diamond 1985: 72–73). This form is distinct in two ways. First, the type is strongly sexually dimorphic, with a boldly plumaged male and a female with the plumage pattern substantially faded (see Coates 1990). Second, male plumage uniquely exhibits a bold dark-brown breast-band and a contrasting white throat.

The pale-washed (monomorphic) type includes two currently recognised forms, B1 from the Cyclops Mountains (*C. r. deficiens*) and B2 from the Arfak and Tamrau Mountains (*C. r. peninsularis*), and is found only in the aforementioned mountains of western New Guinea. This type is sexually monomorphic and resembles the female of the white-throated dimorphic type, but for the lack of an evident breast-band.

The buff-breasted (monomorphic) type includes two subspecies, C1 *C. r. bastille*, from the Torricelli and Bewani Mountains of the north coast of Papua and PNG, and C2 *C. r. sanfordi*, from the western half of the Central Cordillera as well as the mountains of the Wandammen Peninsula (Mount Wondiwoi) of the northern Bird's Neck region of Papua. This type is distinct from all others in its entirely uniform buff ventral plumage. As with the pale-washed type, this type is sexually monomorphic. Presumably, the buff-breasted and white-throated types meet in the Strickland Gorge country, which acts as an ornithogeographic discontinuity for montane birds (Beehler 2007).

This set of three nested distributions is puzzling (Fig. 2) and we are unable to provide a clear process of geographic differentiation that might generate such a pattern. In the absence of the somewhat intermediate pale-washed form, we have little doubt that the buff-breasted and white-throated forms should be treated as an unambiguous sister-species pair—two diagnosable species. But even with this pair of distinct forms, each with some level of infra-form variation, the geography is problematic, and in no way matches the pattern found in Diamond's 'drop-out' model of speciation (1972: 23). It will be interesting to learn what molecular analysis of this lineage will uncover (*cf.* B. Benz in prep.).

For now, we suggest future revisers consider elevating the *buff-breasted* populations (*C. r. sanfordi* and *C. r. bastille*) to species status, leaving the remaining forms in *robusta*, although treating each of the three 'types' as distinct merits consideration.

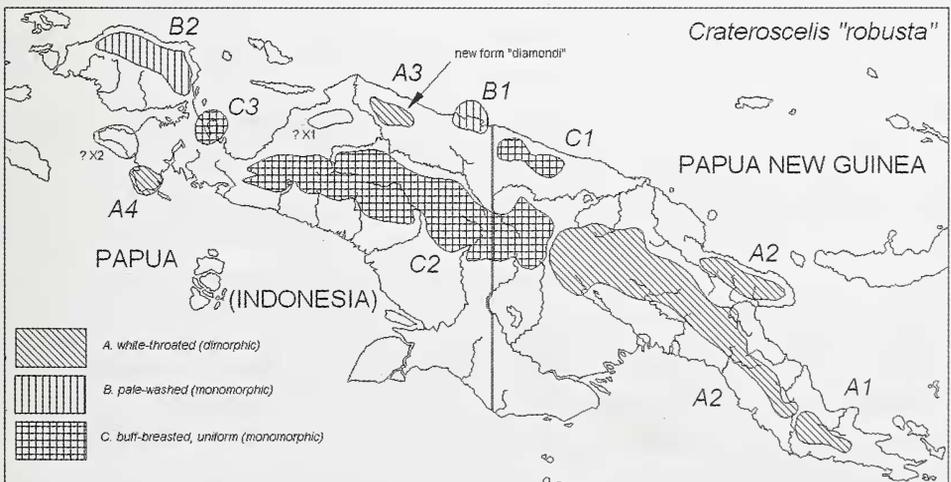


Figure 2. Populations of the *Crateroscelis robusta* complex. 'White-throated group' A1 = *C. r. pratti*, A2 = *C. r. robusta*, A3 = *C. r. diamondi*, A4 = undescribed Kumawa Mountains form characterised by Diamond (1985: 73); 'pale-washed group' B1 = *C. r. deficiens*, B2 = *C. r. peninsularis*; 'buff-breasted group' C1 = *C. r. bastille*, C2 = central range population of *C. r. sanfordi*, C3 = Wandammen/ Mount Wondiwoi population of *C. r. sanfordi*; undiagnosed forms x1 = expected Van Rees Mountains population, x2 = expected Fakfak population.

SMOKY ROBIN *Peneothello cryptoleucus cryptoleucus*

Specimen data.—24 November 2005, male, weight 24 g; 25 November 2005, unsexed, weight 18.5 g. Additional biometric data from birds released: weights: 16.4 g, 17.0 g, 18.0 g, 19.0 g, 19.5 g ($n=2$), 20.5 g, 22.5 g, 23.0 g.

Diamond (1985: 76) suggested the Foja population is referable to the white-bellied population *P. c. albidior* from the Weyland Mountains, but our study skin best matches the nominate form from the Bird's Head Peninsula, in its duskier belly and lack of a darker cap, evident in topotypical specimens of *P. c. albidior*.

GOLDENFACE *Pachycare flavogriseum*

During our studies at AMNH, M. LeCroy pointed out that the stunningly distinctive north coastal form of *Pachycare flavogriseum* from north-western PNG is undescribed. We describe this remarkable rainforest songbird as follows:

Pachycare flavogriseum lecrovae, **subsp. nov.**

Holotype.—Adult male, American Museum of Natural History (AMNH) no. 829706, collected by J. M. Diamond at 1,281 m on Mount Menawa, Bewani Mountains, northern PNG (03°12'S, 141°40'E), on 9 August 1966. Testes moderately enlarged; Diamond field no. 1330. Weight 16.2 g, wing chord 65.0 mm, tail 37.0 mm, tarsus 21.5 mm, bill from base 14.8 mm, feet grey, iris brown, bill black.

Paratypes.—Adult male, Mount Somoro, 945 m, 7 July 1966. Adult males AMNH 829698, 829701, 829703, Mount Nibo, 1,067 m, 10–17 July 1966. Adult male, AMNH 829704 Mount Menawa, 1,220 m, 4 August 1966. Adult females AMNH 829700, 829702, Mount Nibo, 854 m, 10 and 16 July 1966. All collected by J. M. Diamond. Weights (males) 16.5 g, 18.7 g, 19.5 g, 20.0 g, 20.5 g, (females) 15.4 g, 18.5 g, 19.5 g; wing chord (males) 62.0 mm, 63.0 mm, 64.0 mm, 64.5 mm, 65.0 mm, 65.3 mm, (females) 60 mm, 64 mm, 65 mm; tail (males) 34.0 mm, 37.0 mm, 37.5 mm, 38.0 mm, 40.0 mm, 40.5 mm, (females) 34.0 mm, 38.6 mm, 39.0 mm; tarsus (males) 21 mm ($n=2$), 22 mm ($n=4$), (females) 20.4 mm, 21.0 mm, 22.5 mm; bill from base (males) 16.9 mm, 17.0 mm ($n=2$), 17.5 mm, 18.0 mm, 18.5 mm, (females) 16.5 mm, 17.0 mm, 18.0 mm.

Diagnosis.—The new taxon's breast plumage is Spectrum Orange (Colour 17) in places grading to Orange Yellow (Colour 18; *vide* Smithe 1975), which is distinct from all other populations of the species, in which breast coloration ranges from orange-yellow to pale yellow. Breast coloration for the other named populations are as follows: *P. f. subpallidum*: Spectrum Yellow (Colour 55); *P. f. flavogriseum*: richer and deeper than Spectrum Yellow; *P. f. subaurantium*: slightly richer than the nominate form; and *P. f. randi*: Orange Yellow (Colour 18). The face, throat and breast of the various populations ranges from yellow to deep orange, with the new form being the most intense and spectacular of any of the subspecies. Apparently, Diamond did not describe this new form because he believed that its bright colour was fugitive and that with time his specimens would fade to match some of these other populations (Diamond 1972: 272–273). More than four decades have passed since Diamond collected his material from the north coastal ranges and the colour remains stunningly rich. The population from the Foja Mountains, which we heard but did not observe, remains uncollected.

Thus the population exhibiting the richest-orange plumage is found in the north coastal ranges of PNG, whereas the next-richest form is found on the northern slopes of the central ranges, in western New Guinea, and those slightly less rich in the Weyland Mountains of the far western central cordillera, followed by the mountains of the Bird's Head Peninsula. The least richly coloured form is found in eastern New Guinea. Examination of specimens

of all described forms indicates no substantial mensural differences. Unlike the 'yellow' populations, which exhibit grades of ventral yellow, this population is unique and the specimens can be distinguished from some distance. By contrast *P. f. subpallidum* merits submersion into the nominate subspecies.

Distribution and habitat.—Apparently from mid-montane forest interior of the Bewani and Torricelli Mountains of PNG.

Etymology.—The proposed name honours Mary LeCroy of the Ornithology Department of the American Museum of Natural History, long a student of the avifauna of New Guinea, who over the years has provided unstinting expert advice and assistance in museum studies of the birds of the region.

MAYR'S STREAKED HONEYEATER *Ptiloprora mayri acrophila*

Specimen data.—Male weight 34 g, wing chord 99 mm, wing arc 100 mm, iris green; unsexed, weight 27.0 g, 30.5 g, wing chord 91.0 mm, 99.5 mm, wing arc 94.0 mm, 101.5 mm, iris green.

Additional material.—(Mist-netted and released) weight: 21.0 g, 23.0 g, 23.2 g, 24.0 g ($n=2$), 24.5 g, 26.0 g, 27.0 g ($n=2$), 28.0 g, 28.5 g, 30.5 g, 31.0 g, 31.5 g; wing chord 86.5 mm, 88.0 mm, 89.0 mm ($n=2$), 92.0 mm ($n=2$), 99.0 mm ($n=2$); wing arc 88.0 mm, 92.0 mm ($n=3$), 93.5 mm, 94.0 mm, 101.0 mm ($n=2$); iris green (all). Juvenile (yellow-washed plumage) weight 18.5 g, 22.5 g; wing chord 87 mm, 88 mm; wing arc 90 mm ($n=2$); iris grey ($n=1$), green ($n=1$).

Material from the Foja Mountains is attributable to *P. m. acrophila* from the PNG north coastal range, which is marginally differentiated from the nominate form from the Cyclops Mountains. As with *Rallicula* populations, the various populations of *Ptiloprora mayri* and *P. guisei* might best be treated as a single polytypic species (see Diamond 1968: 46–54).

ORNATE MELIDECTES *Melidectes ochromelas ochromelas*

Specimen data.—Female weight 64 g, 70 g, wing chord 125 mm, 126 mm, wing arc 126 mm, 129 mm, iris dark brown ($n=2$); juvenile? (unsexed) weight 61 g, wing chord 119 mm, wing arc 122 mm, iris dark brown. Foja material is closest to the nominate form from the Bird's Head Peninsula. This was one of the most vocal and common species in the Bog Camp environs.

WATTLED SMOKY HONEYEATER *Melipotés carolae*

The coordinates and elevation for the original type description of this species (Beehler *et al.* 2008) are corrected as follows: Bog Camp, Foja Mountains, Sarmi District, Papua, Indonesia, 1,652 m (02°34'22''S, 138°43'02''E).

GOLDEN-FRONTED BOWERBIRD *Amblyornis flavifrons*

Specimen data.—Adult males ($n=2$) testis 4 × 9 mm, 5 × 10 mm, weight 114 g, 117 g, wing chord 135.0 mm, 137.5 mm, wing arc 137 mm, 140 mm, iris dark brown ($n=2$); females ($n=2$), ova small ($n=2$), weight 105 g, 125 g, wing chord 130 mm, 132 mm, wing arc 132 mm, 136 mm, iris dark brown ($n=2$).

Additional material.—(Adult male plumage) weight 113 g, 115 g, wing chord 132 mm, 133 mm, wing arc 134 mm, 135 mm, iris dark brown ($n=2$); (female plumage) weight 114, 127 g, wing chord 131 mm, 132 mm, wing arc 133 mm, 137 mm, iris dark brown ($n=2$).

Female plumage.—We obtained the first examples of the adult female of this Foja endemic, described here. Not distinct from *A. macgregoriae* and *A. inornatus*. Crown Burnt Umber (22); mantle Cinnamon Brown (33) to Raw Umber (223); chin and upper throat with

evidence of obsolete streaking, pale Cinnamon Drab (219c) to Ground Cinnamon (230); breast between Prout's Brown (121a) and Brussels Brown (121B); abdomen Buff (24) and Clay (26). Bill of dried specimen dark brown; legs black.

Habits.—Common and easily located in mid-montane elevations, the males attending display bowers on ridge crests in the forest interior. Each male attended his bower for much of each day, and gave remarkable mimetic sounds from a perch low down near the bower. Part of the never-before-observed high-intensity display, in which the male flares his crest into an orange crown and circles the bower was filmed in 2007 (see www.cbsnews.com/stories/2007/12/13/60minutes/main3615385_page3.shtml). This display is similar to that reported for Macgregor's Bowerbird (Frith & Frith 2004: 284).

BLACK SICKLEBILL *Epimachus fastuosus ultimus*

Specimen data.—Female, ova small, weight 177 g, wing chord 152 mm, wing arc 156 mm, tail 287 mm, tarsus 46 mm, bill from base 72 mm, iris orange with a brown inner ring. We found this species to be a vocal inhabitant of the forests above the Bog Camp. A single female was mist-netted and was indistinguishable from *E. f. ultimus* collected by Diamond in the Bewani Mountains of north-western PNG.

BRONZE PAROTIA *Parotia berlepschi*

The team observed, mist-netted, photographed and collected specimens of this 'lost' bird of paradise (*cf.* Gilliard 1969, Diamond 1985, Frith & Beehler 1996: 300). Its discovery in the Foja Mountains parallels Diamond's (1982) discovery of the 'lost' Golden-fronted Bowerbird. Known only from male-plumage trade skins collected in the 1890s, our field observations and specimens represent the first documentation of this population in life. We will address in detail the status and natural history of this species in a separate publication. We here suggest an English name for the species, based on its bronze-coloured crown.

CYCLOPS PAROTIA *Parotia* sp. indeterminate

While conducting surveys in the Yongsu Dosoyo region of the northern foothills of the Cyclops Mountains (Setio *et al.* 2002), BMB worked with a bird-hunter named Simson Nusa, who was very knowledgeable about the region's forest birdlife. BMB and SN spent considerable time discussing the regional avifauna, perusing the field guide plates and discussing particularly interesting species. During these discussions, SN noted that on a single occasion, while shooting birds from a canopy hide constructed in a fruiting tree, he shot an all-black, long-tailed *Parotia*, which he indicated was most similar to male Lawes' Parotia *P. lawesii*. Future field work in the Cyclops Mountains should make a special effort to determine whether a population of *Parotia* does inhabit the Cyclops Mountains, and whether this montane population is more closely related to the *Parotia* in the Fojas or that inhabiting the central range to the south.

Discussion

A third and final expedition to the Foja Mountains was completed in late December 2008. The results of that field trip will be presented in a subsequent paper, which will also summarise the entire known avifauna of the Foja Mountains. Based on the field trips reported here and the 2008 field work, we suggest that additional effort focusing on outlying ranges (*cf.* Diamond 1985)—especially the Kumawa, Fakfak, Van Rees, and Wandammen / Wondiwoi ranges—will prove productive. We also believe that additional work in the Cyclops Mountains is merited. In all cases, extensive mist-netting efforts will prove useful, as most early field efforts lacked this important survey tool. Finally, the addition

of molecular analyses of the many outlying populations will assist in the clarification of relationships and taxonomic status of closely related forms.

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